

CLAIMS

1. Use of an immune modulator composition or a pharmaceutical composition comprising a whole cell of a bacterium from one or more of the genera *Rhodococcus*,
5 *Gordonia*, *Nocardia*, *Dietzia*, *Tsukamurella* and *Nocardoides* in the manufacture of a medicament for the treatment or prevention of an autoimmune disease or autoimmune disorder.
- 10 2. Use according to claim 1 wherein the autoimmune disease or autoimmune disorder involves inflammation of the intima of a blood vessel.
- 15 3. Use according to claim 2 wherein the autoimmune disease or autoimmune disorder further involves inflammation of the muscular layer of a blood vessel or of the myocardium.
4. Use according to any one of the preceding claims wherein the autoimmune disease or autoimmune disorder is one which is preceded by or caused by a vascular disorder.
- 20 5. Use according to any one of the preceding claims wherein the autoimmune disease or autoimmune disorder is selected from one or more of the following: arthritis, particularly rheumatoid arthritis, psoriasis, psoriatic arthropathy, scleroderma, thyroiditis, post-transplant intimal hyperplasia, graft rejection and vascular disorders.
- 25 6. Use according to claim 5 wherein the vascular disorder is a vascular disorder which comprises an autoimmune element.
7. Use according to claim 5 or claim 6, wherein the vascular disorder is selected from one or more of the following: Raynaud's disease or phenomenon, anterior 30 uveitis, obliterative vascular disorder, atheroma formation (otherwise known as arteriosclerosis), arteritis, myointimal hyperplasia (natural or following angioplasty),

inflammatory and autoimmune thickening of the intima and/or muscular layer of blood vessels, inflammatory blood vessel lesions, atherosclerotic heart disease, reperfusion injury, cardiac conduction disturbances, myocarditis, myocardial infarction.

- 5 8. Use according to claim 5 wherein the graft rejection is chronic graft rejection
9. Use according to claim 5 wherein the graft rejection is chronic graft rejection in the absence of an immunosuppressant.
- 10 10. Use according to any one of claims 1-9 wherein said bacterium is selected from one or more of the group consisting of *Gordonia bronchialis*, *Gordonia amarae*, *Gordonia sputi*, *Gordonia terrae*, *Nocardia asteroides*, *Dietzia maris*, *Tsukamurella paurometabola*, *Rhodococcus ruber*, *Rhodococcus rhodnii*, *Rhodococcus coprophilus*, *Rhodococcus opacus*, *Rhodococcus erythropolis*, *Nocardioides albus* and *Tsukamurella inchonensis*.
- 15 11. Use according to any one of the preceding claims wherein said bacterium is killed.
- 20 12. A method for treating or preventing an autoimmune disease or an autoimmune disorder comprising administering an effective amount of a pharmaceutical composition and/or immune modulator composition comprising a whole cell of a bacterium from one or more of the genera *Rhodococcus*, *Gordonia*, *Nocardia*, *Dietzia*, *Tsukamurella* and *Nocardioides* to a subject wherein said composition modulates a cellular immune response.
- 25 13. A method for immunising a subject against an autoimmune disease or an autoimmune disorder comprising administering a pharmaceutical composition and/or immune modulator composition comprising a whole cell of a bacterium from one or more of the genera *Rhodococcus*, *Gordonia*, *Nocardia*, *Dietzia*, *Tsukamurella* and *Nocardioides*.

14. A method according to claim 12 or claim 13 wherein the autoimmune or of the myocardium disease or autoimmune disorder involves inflammation of the intima of a blood vessel.

5 15. A method according to claim 14 wherein the autoimmune disease or autoimmune disorder further involves inflammation of the muscular layer of a blood vessel, or of the heart.

10 16. A method according to any one of claims 12-15 wherein the autoimmune disease or autoimmune disorder is one which is preceded by or caused by a vascular disorder.

15 17. A method according to any one of claims 12-16 wherein the autoimmune disease or autoimmune disorder is selected from one or more of the following: arthritis, particularly rheumatoid arthritis, psoriasis, psoriatic arthropathy, scleroderma, thyroiditis, post-transplant intimal hyperplasia, graft rejection and vascular disorders.

20 18. A method according to claim 17 wherein the vascular disorder is a vascular disorder which comprises an autoimmune element.

25 19. A method according to claim 17 or claim 18, wherein the vascular disorder is selected from one or more of the following: Raynaud's disease or phenomenon, anterior uveitis, obliterative vascular disorder, atheroma formation (otherwise known as arteriosclerosis), arteritis, myointimal hyperplasia (natural or following angioplasty), inflammatory and autoimmune thickening of the intima and/or muscular layer of blood vessels, inflammatory blood vessel lesions, atherosclerotic heart disease, reperfusion injury, cardiac conduction disturbances, myocarditis, myocardial infarction.

30 20. A method according to claim 17 wherein the graft rejection is chronic graft rejection

21. A method according to claim 19 wherein the graft rejection is chronic graft rejection in the absence of an immunosuppressant.
22. A method according to any one of claims 12-21 wherein said bacterium is selected from one or more of the group consisting of *Gordonia bronchialis*, *Gordonia amarae*, *Gordonia sputi*, *Gordonia terrae*, *Nocardia asteroides*, *Dietzia maris*, *Tsukamurella paurometabola*, *Rhodococcus ruber*, *Rhodococcus rhodnii*, *Rhodococcus coprophilus*, *Rhodococcus opacus*, *Rhodococcus erythropolis*, *Nocardoides albus* and *Tsukamurella inchonensis*.

10 23. A method according to any one of claims 12-22 wherein said bacterium is killed.

24. A method as substantially hereinbefore described.

25. A use as substantially hereinbefore described.